In response to the objection to the drawing, submitted herewith is an amended figure, with the designation "Fig. 1" labeled on it in red. Upon approval by the examiner, the figure will be corrected as shown in red.

The specification as been amended to add in "Fig. 1" to the drawing.

Claims 1-10 were rejected under 35 U.S.C. 102(e) as being anticipated by Kojima et al. U.S. patent 6,179,569. The examiner's rejection is respectfully traversed below.

It is common practice for syringe pumps to monitor for occlusions and to stop pumping when such an occlusion is detected. There will usually be an increase in pressure in the pump and associated tubing etc caused by the occlusion, until the pump is stopped. In most pumps, when the occlusion is removed there is a risk that a bolus of excess medication can be supplied to the patient because of the pressure build up. The pump of the present invention responds to a detected occlusion by reversing the drive applied to the plunger so that it moves backwardly slightly to relieve the excess pressure that builds up before the drive is stopped. More particularly, the pump measures the force on the plunger and reverses drive until the force falls to a level at which an excess bolus will not be administered.

The cited Kojima syringe pump has a pressure sensor which is responsive to excess positive pressure (e.g., caused by an occlusion) and negative pressure (caused by siphoning movement of the plunger). There is no disclosure or suggestion that the pump drive be reversed momentarily when an occlusion is detected in the manner of the present invention. Nor is there any disclosure in the prior art suggesting that the pump monitors force on the plunger and reverses drive until this force falls to a predetermined level, in the manner of the present invention.

In view of the foregoing, applicants respectfully submit that the pending claims are patentable over the prior art. Accordingly, the examiner is respectfully requested to reconsider the application and pass the case to issue.

Respectfully submitted,

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VERSION TO SHOW MARKINGS TO SHOW CHANGES MADE

Attachment Specification Portions Pursuant to 37 C.F.R. 1.121(b)(1)(iii)

Page 3, amend the sentence under "Brief Description of the Drawings":

[The drawings] Figure 1 is a simplified view of the front of the pump.

Attachment Claims Pursuant to 37 C.F.R. 1.121(c)(1)(ii)

Please cancel claims 2, 3 and 6.

Amend claims 1, 4, 5, 9 and 10 as follows:

1. (Amended) A syringe pump adapted to receive a syringe having a plunger movable along a barrel, the pump comprising: a drive mechanism for moving said plunger along said barrel; and an occlusion detector responsive to occlusion to flow of medication from said syringe, said occlusion including a force sensor, wherein the pump is operable in response to a detected occlusion to reverse the drive applied to move said plunger along said barrel sufficiently until the force detected by said force sensor falls by a predetermined amount [to reduce excess force on the medication caused by said occlusion].

4. (Amended) A pump according to Claim [3] 1, wherein the pump is arranged to reverse the drive until force detected by said force sensor is substantially 10% of the force at which an occlusion is detected.

5. (Amended) A syringe pump adapted to receive a syringe having a plunger movable along a barrel, the pump comprising: a drive mechanism, said drive mechanism including a motor, a leadscrew driven by said motor and a plunger retainer movable along the leadscrew such as to move said plunger along said barrel; and a force sensor mounted with said plunger retainer to detect excess force on said plunger, wherein the pump is operable in response to an output from said force sensor indicative of an excess force to reverse said motor until the output of said force sensor indicates an absence of an excessive force [sufficiently to reduce substantially said excess force].

9. (Amended) A method according to Claim [6] 7, wherein the pump generates an alarm when force on said plunger exceeds a predetermined value.

10. (Amended) A method according to Claim [6] 7, wherein the pump only reapplies force to dispense medication when the pump is manually restarted after detection of an occlusion.